

FIG. 1

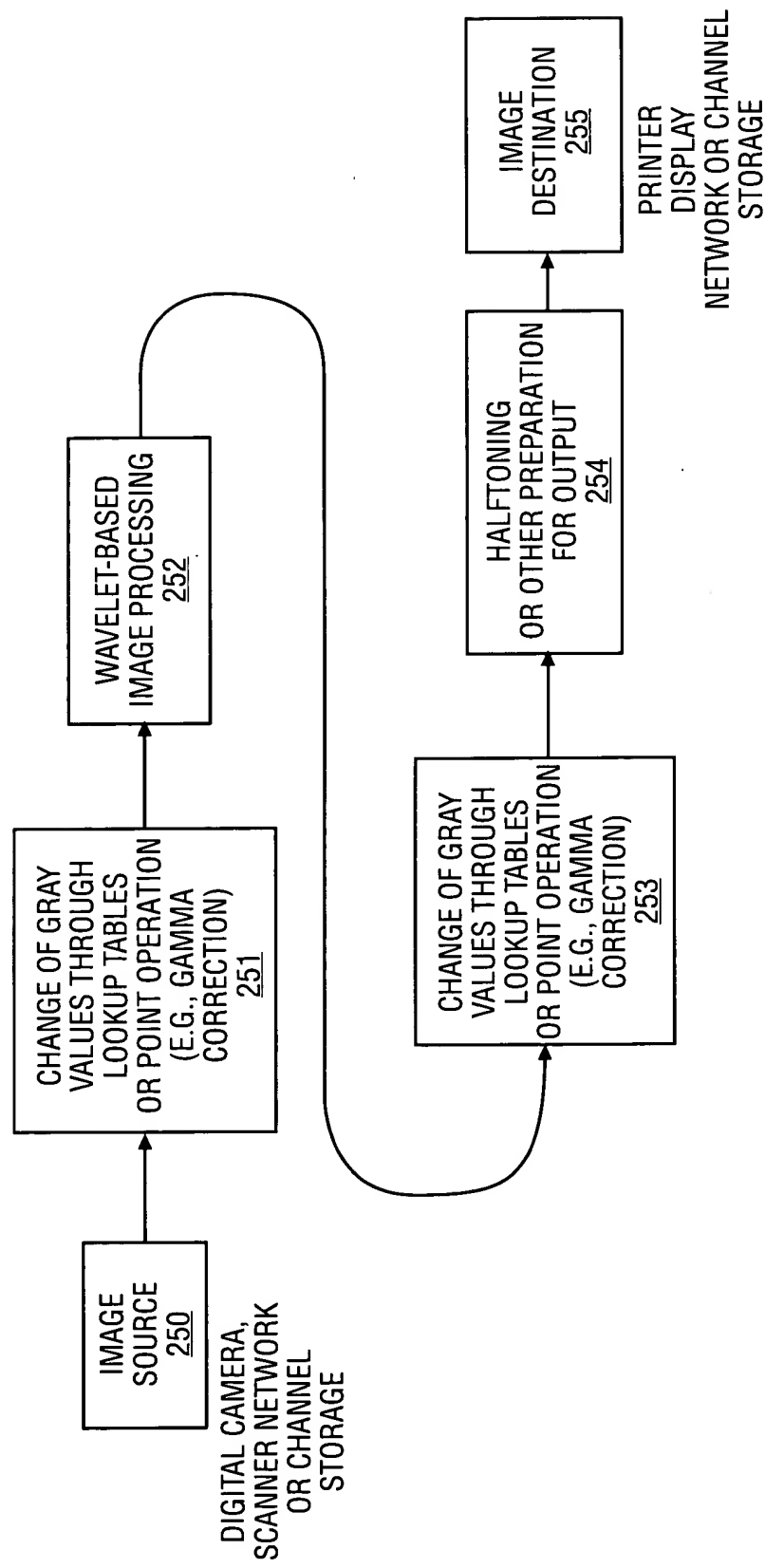


FIG. 2A

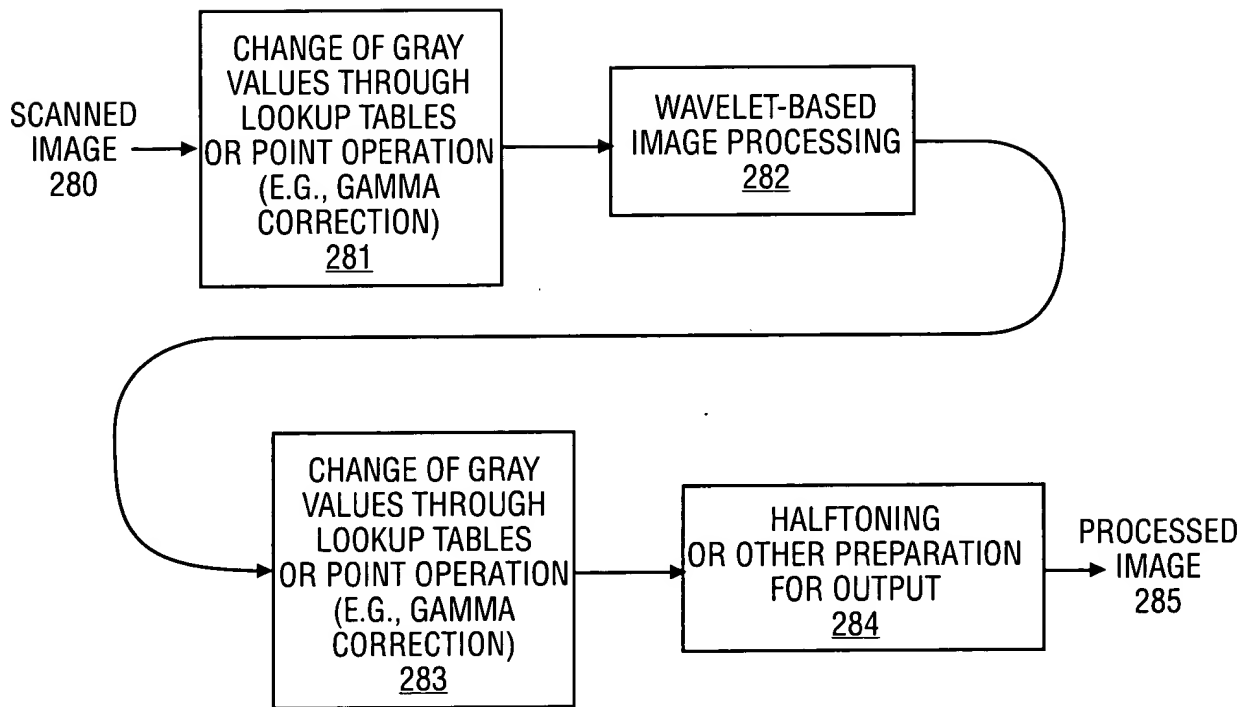


FIG. 2B

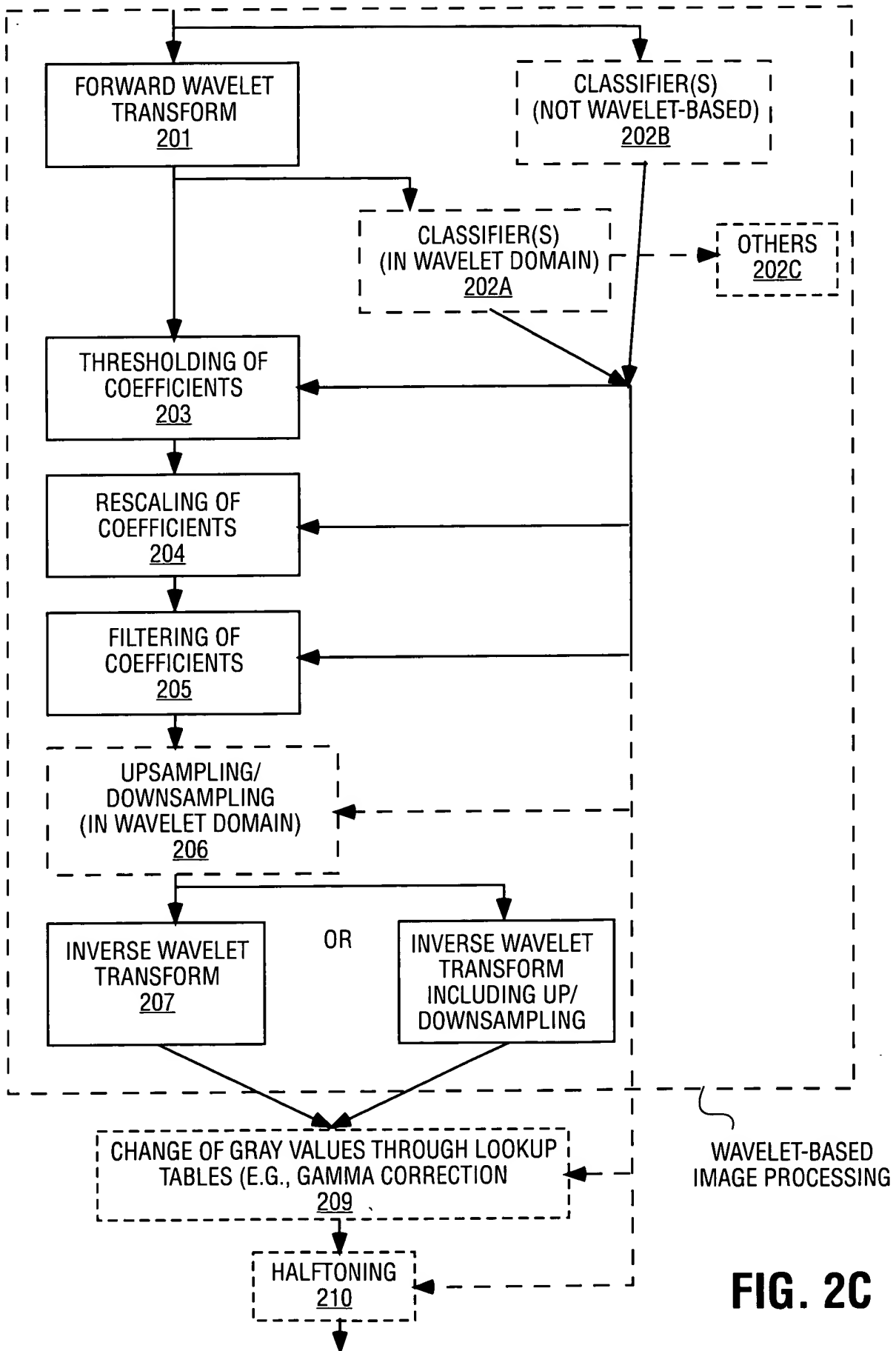


FIG. 2C

$$\begin{bmatrix} 1 & 1 & 0 & 0 & 1 & 1 \\ 1 & 1 & 0 & 0 & 1 & 1 \\ 0 & 0 & 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 0 & 1 & 1 \\ 1 & 1 & 0 & 0 & 1 & 1 \end{bmatrix}$$

$$\begin{bmatrix} 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 1 & 1 & 1 & 0 \\ 0 & 1 & 1 & 1 & 0 & 0 \\ 1 & 1 & 1 & 0 & 0 & 1 \\ 1 & 1 & 0 & 0 & 1 & 1 \\ 1 & 0 & 0 & 1 & 1 & 1 \end{bmatrix}$$

halftone pattern in
image

diagonal line pattern
in image

$$\begin{bmatrix} 0 & 2 & 0 & -2 & 0 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & -2 & 0 & 2 & 0 & -2 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 2 & 0 & -2 & 0 & 2 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 2 & 0 & -2 & 0 & 2 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -2 & 0 & 2 & 0 & -2 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 2 & 0 & -2 & 0 & 2 & 0 \end{bmatrix}$$

$$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & 0 \\ -2 & 0 & 2 & 0 & -2 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 2 & 0 & -2 & 0 & 2 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -2 & 0 & 2 & 0 & -2 & 0 \end{bmatrix}$$

halftone pattern in HL, LH, HH band (left to right)

$$\begin{bmatrix} 1 & 1 & -1 & -1 & 0 & 1 \\ 1 & -1 & -1 & 0 & 1 & 1 \\ -1 & -1 & 0 & 1 & 1 & 0 \\ -1 & 0 & 1 & 1 & 0 & -1 \\ 0 & 1 & 1 & 0 & -1 & -1 \\ 1 & 1 & 0 & -1 & -1 & 0 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 1 & -1 & -1 & 0 & 1 \\ 1 & -1 & -1 & 0 & 1 & 1 \\ -1 & -1 & 0 & 1 & 1 & 0 \\ -1 & 0 & 1 & 1 & 0 & -1 \\ 0 & 1 & 1 & 0 & -1 & -1 \\ 1 & 1 & 0 & -1 & -1 & 0 \end{bmatrix}$$

$$\begin{bmatrix} -1 & 1 & 1 & -1 & 0 & -1 \\ 1 & 1 & -1 & 0 & -1 & 1 \\ 1 & -1 & 0 & -1 & 1 & 1 \\ -1 & 0 & -1 & 1 & 1 & -1 \\ 0 & -1 & 1 & 1 & -1 & 0 \\ -1 & 1 & 1 & -1 & 0 & -1 \end{bmatrix}$$

diagonal line pattern in HL, LH, HH band (left to right)

figure 4A

second level

LL	LH	HL	HH
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first level

LH	HL	HH
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classification criterion

classifier image

figure 4B

[illegible]

LH

x ₁	x ₂	x ₃
x₄	x₅	x₆
x ₇	x ₈	x ₉

HL

x ₁	x₂	x ₃
x ₄	x₅	x ₆
x ₇	x₈	x ₉

HH

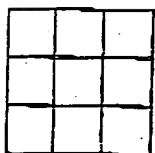
x ₁	x ₂	x₃
x ₄	x₅	x ₆
x₇	x ₈	x ₉

HH

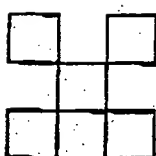
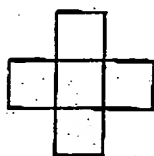
x₁	x ₂	x ₃
x ₄	x₅	x ₆
x ₇	x ₈	x₉

FIG. 5

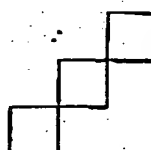
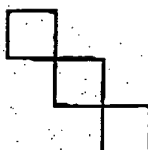
(A) ☐



(B)



(C)



(D)

figure 6

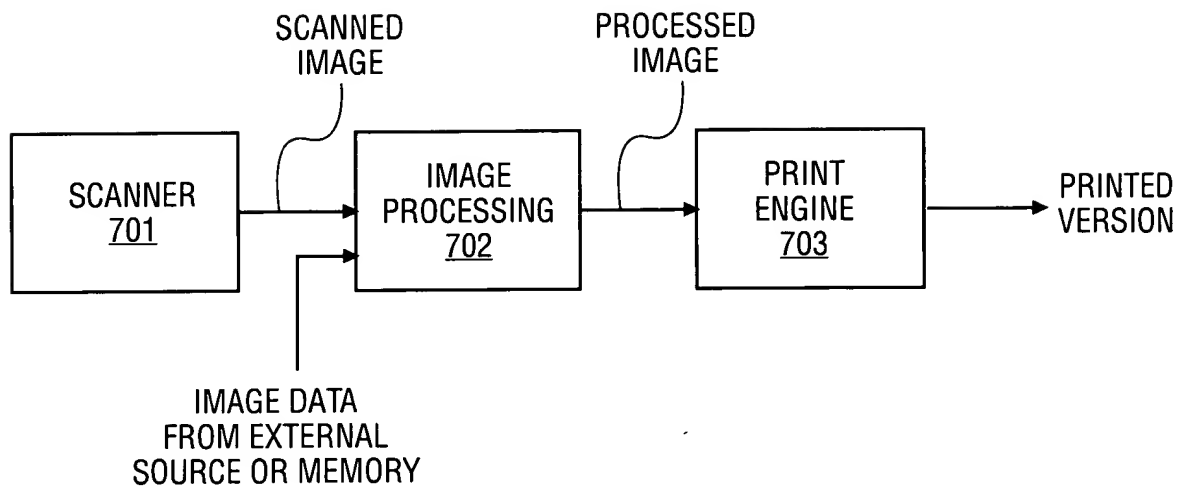


FIG. 7

800

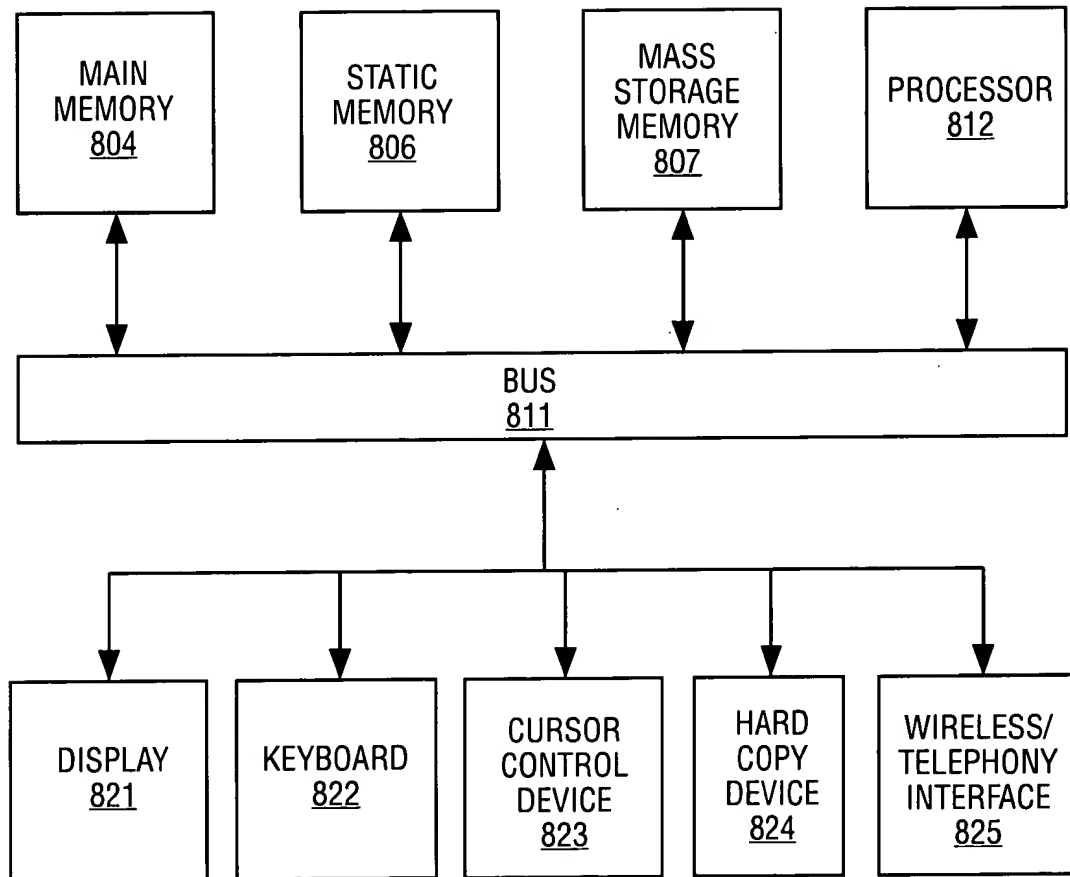


FIG. 8